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that is produced by Spencer's work, least satisfactory where the reader knows most about the subjects treated. Certainly under the heads of neurology and psychology, it is somewhat inaccurate and a trifle naïve. The author seems willing almost anywhere to take up a position on questions that are controverted and inherently difficult of decision. Another criticism is that the deductive tendency is more implicitly followed by the author than the nature of his material allows. Once having reached a (perhaps tentative) conclusion on some question, he is satisfied to use this conclusion as the basis of far-reaching deductions. For example, this is his evidence in favor of a richer emotional life in warm-blooded than in cold-blooded animals: "The warm-blooded type developed as a result of the development of the sympathetic nervous system, which regulates the vasomotor system in such a fashion as to keep the body at a uniform temperature by sending blood where more warmth is needed and stimulating the action of the sweat glands where the heat needs to be reduced. I have not the space to discuss the causes for this development here. As we have seen in an earlier chapter, the emotions arise out of the activity of the sympathetic system, so that the development of that system means the development of the emotional nature of these classes of animals. So that the emotions involved in sexual, parental and wider social relationships now begin to play a wider part" (pp. 372-373). It is but fair to say that the author's treatment is much more satisfactory when the broad trend of the book is considered than when particular passages are taken for examination. Certainly it is well to bring emphatically before the reading public the notion that a science of human behavior is possible (and actual, as well, to a much greater degree than this book indicates), and that this science is distinctly a biological science, related to the study of animal behavior, on one side, and on another, to the structure and functions of the nervous system.

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BOTANICAL NOTES

FIGHTING THE CHESTNUT BLIGHT

ONE of the most interesting contests is now being waged between the trained plant pathologists on the one hand and a parasitic fungus on the other, and thus far it must be admitted that the outcome of the battle is by no means as assured as we could wish it to be. The chestnut tree is found naturally in an area stretching from southern Maine to Georgia and Alabama and extending a greater or less distance east and west of the Appalachian Mountains. A few years ago (1904) a disease of the bark of this tree appeared near New York City, and from this point it has spread northeastward, westward and south-eastward as far as Massachusetts, Vermont, Central Pennsylvania, Maryland and Virginia. It has been made out that the disease is due to a Sphaeriaceus fungus known as *Diaporthe parasitica*, the structure of which has been pretty well investigated.

So threatening has this disease become that last February a general conference was held in Harrisburg, Pennsylvania, for the consideration of ways and means for preventing its further spread, the results of which appeared a little later in a thick pamphlet of a little more than two hundred and fifty pages of papers, discussions and proposed programs. Many half-tone reproductions of drawings and photographs add greatly to the value of the publication, which must prove to be most useful to the man who wants to try to save his chestnut trees, as well as to the botanist who wishes to keep in touch with this contest between pathological science and a rapidly spreading, disease-producing fungus. As the pamphlet is a state publication it can no doubt be had by application to the governor, at Harrisburg, Pennsylvania.

BOTANICAL NOTES

A HANDY little flora of central and northern Europe has been compiled by F. Hermann, and published by Weigel (Leipzig) under the title of "Flora von Deutschland und Fennoskandinavien sowie von Island und Spitz-

bergen." It covers the area bounded westwardly by Belgium and eastern France, south-erly and easterly by Switzerland, Galacia and central Russia, to the White Sea, Spitzbergen and Iceland. It thus includes Germany, Belgium, Holland, Denmark, Norway, Sweden, more than one half of Russia, besides parts of Austria and France, and the islands mentioned. Yet in spite of the large area included the book contains only 524 small octavo pages. It should serve as a good model for our North American manuals.

MISS FREDERICA DETMERS has published her dissertation for the doctorate, "An Ecological Study of Buckeye Lake," as a contribution to the phytogeography of Ohio, constituting a pamphlet of 138 pages. This artificial lake, a little more than seven miles long, and from a quarter of a mile to a mile and a half in width, was constructed eighty years or more ago on the site of an impassable swamp. Some interesting studies were made by Miss Detmers, and these are recorded in her paper. There is an annotated list of plants collected in and about the lake, and a good bibliography.

THE New Jersey Forest Park Reservation Commission has issued a useful pamphlet entitled "The Planting and Care of Shade Trees" which may interest botanists, and certainly will do so for those who are interested in trees. The second half of the book is devoted to "Insects Injurious to Shade Trees," by the state entomologist, J. B. Smith, and "Diseases of Shade and Forest Trees," by the state plant pathologist, M. T. Cook. Many good "half-tone" reproductions of photographs add much to the value of the report.

ALLIED to the foregoing is the paper on "Cultivation of Native Ornamental Plants," by Miss Eloise Butler, in the October *Minnesota Horticulturist*. In it the author enthusiastically urges the use of a large number of wild plants, listing them under the following heads, Trees, Shrubs, Woody Vines, Herbaceous Vines, Shade Plants, Early Flowering Herbs (chiefly shade plants), Flowering Herbs

that will grow in Full Sun. On reading the paper one is filled with a desire to make a little wild garden in one's back yard.

HERE we may notice briefly Professor Henry Kraemer's "Outlines of Courses in Botany, Microscopy and Pharmacognosy" for pharmacy students. The "first year's work" (botany) as here outlined is one of the best we have seen.

A DOZEN years ago Professor Selby, of the Ohio Agricultural Experiment Station, published a bulletin (No. 121) entitled "A Condensed Handbook of Diseases of Cultivated Plants in Ohio," which proved to be so useful that a demand sprang up for it all over the country. Two years ago he published in pamphlet form a revised and enlarged edition (No. 214) under practically the same title, and now we have a bound book with essentially the same matter as the second edition but with the title "Handbook of Diseases of Cultivated Plants." This also is issued by the Experiment Station, and is numbered as before (214). In its present form it is a handy book of somewhat more than one hundred and fifty pages of text and includes one hundred and six text illustrations. We may hope that in time this may grow into a still more complete handbook of plant diseases, the need of which is suggested by the demand shown for this bulletin.

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THE AGE OF *PITHECANTHROPUS ERECTUS*

JUST twenty years ago Dubois startled the scientific world by his announcement of the discovery of the skeletal remains of an ape-man, *Pithecanthropus erectus*, near the hamlet of Trinil in east central Java. The age was supposed to be Pliocene, and recently Dubois has reiterated his belief in the Pliocene age of this unique material, in which he is confirmed by Stremme and others. Discussion of the age of these remains has been the basis for a considerable volume of literature and the recent tendency has been toward considering *Pithecanthropus* younger rather than older. Thus Martin and Elbert assign it to the old